

## REMARKS

Amendments to the claims have been made to respond to the issues and concerns raised in the Office Action, to clarify aspects in the specification and claims, and to refine claim language. The amendments are believed to be consistent with the disclosure originally filed. The amendments also have been particularly presented to avoid, where applicable, any admission or estoppel, generally, negatively affecting the scope of protection provided by the disclosure and claims of the present application, and also in a manner that avoids prosecution history estoppel, limitation of the scope of equivalences, or the like. Any amendment should not be construed as an admission regarding the propriety of any objection or rejection raised in any Office Action, and the Applicant reserves the right to pursue the full scope of the unamended claims in any subsequent patent application as may be appropriate.

Claims 186-197, 199-203, 205-208, and 210-220 have been amended. Claims 1-185, 198, 204, and 209 have been cancelled. Claims 186-197, 199-203, 205-208, and 210-220 remain in the application. Each amendment is believed to have been made in accordance with Rule 121. However, should any unintended informality exist, it is requested that the undersigned be contacted by telephone so that it may be resolved as expediently as possible. It is believed the amendments fully respond to the issues raised in the Office Action. Further detail with respect to specific points raised in the Office Action is offered below.

Included with this response is an Information Disclosure Statement. While the Information Disclosure Statement includes additional information for the Office to consider and may increase the examination burden associated with this Application, the Applicant believes the Information Disclosure Statement is the only way for it to comply with its obligations under Rule 56.

The Office raises a number of enablement and written description concerns. These concerns appear to present overlapping considerations directed to low dose

insemination, statistical success, and the range of any nonhuman mammals. The Applicant disagrees with the Office's concerns and believes the claims are fully enabled as presented and were possessed by the Applicant at the time of filing of the application. However, the Applicant's amendments are believed to address the Office's concerns, specifically by removing the need to enable low dose insemination, achieve statistical success, and produce offspring across the range of any nonhuman mammals. Of course, the amendments are made solely to facilitate examination of the case and should not be construed as an admission by the Applicant. With respect to claim 189, the Applicant notes this recitation appears in the originally filed claims, as evidenced by claim 7 of WO 99/33956, and that the claims as filed in the original specification are part of the disclosure, as set forth in MPEP § 2163.06. Accordingly, the Applicant respectfully requests withdrawal of the Office's enablement and written description concerns.

The Office raises definiteness concerns with respect to the recitation of a "low number of said sperm cells relative to a typical artificial insemination sample". The Applicant disagrees this recitation is indefinite. The terms "low number" and "low dose" are used extensively in the field of artificial insemination and are implicitly related to artificial insemination samples that are considered in the field to be typical. Evidence of this may be seen, for example, in the Buchanan, Cran, Lindsey, Martinez, Maxwell, Rath, Rigby, Seidel, Vazquez, Hollinshead, and Bodmer publications attached to this response as Exhibit "A", where the term "low" appears even in the title of the article. Moreover, the types of animals covered by these publications include multiple examples of horses, sheep, pigs, and cows, evidencing that the term "low" is understood even across multiple kinds of animal species. Accordingly, the Applicant respectfully requests the Office withdraw its definiteness concerns regarding this recitation.

The Office raises definiteness concerns with respect to the recitation of "success levels statistically comparable to a typical artificial insemination dosage". The Applicant disagrees that this recitation is unclear. However, the Applicant's amendments are believed to address the Office's concerns. Of course, the amendments are made solely to facilitate examination of the case and should not be construed as an admission by the

Applicant. Accordingly, the Applicant respectfully requests the Office withdraw its definiteness concerns regarding this recitation.

The Office raises definiteness concerns with respect to the recitation of “after the time which is generally regarded as optimal for a single artificial insemination”. The Applicant disagrees that this recitation is indefinite. The concept and terminology relating to an optimal time for insemination are well known in the field. Evidence of this may be seen, for example, in the Pursley (*see* pages 2139, 2141, 2143), Nebel (*see* page 3185), Maatje (*see* pages 1098, 1100-1104), Dransfield (*see* pages 1874-1875, 1879-1880), Dalton (*see* pages 2413-2414, 2416), and Rozeboom (*see* page 2325) publications attached to this response as Exhibit “B”. Accordingly, the Applicant respectfully requests the Office withdraw its definiteness concerns regarding this recitation.

The Office raises definiteness concerns with respect to the recitation of a “cell source which supplies sperm cells to be sorted”. The Applicant disagrees that this recitation is indefinite. The term cell source is illustrated as element (1) in Fig. 1 as part of a flow cytometer. The cell source is described on page 9, lines 3-4 of WO 99/33956 as acting to establish or supply cells or some other type of item to be analyzed by the flow cytometer. Accordingly, the Applicant respectfully requests the Office withdraw its definiteness concerns regarding this recitation.

The Office raises definiteness concerns with respect to the recitation of “sensing a property of said sperm cells”. The Applicant disagrees that this term is unclear. The specification at page 9, lines 17-28 of WO 99/33956 thoroughly describes a cell sensing system in the context of a flow cytometer and with further reference to the discussion in US Patent No. 5,135,759. One with skill in the art would readily be able to access the Applicant’s specification and the patent to determine what is encompassed by the claimed step. Accordingly, the Applicant respectfully requests the Office withdraw its definiteness concerns regarding this recitation.

The Office raises obviousness concerns with respect to the claims. While the Applicant disagrees that the claims are obvious over the references cited by the Office, the Applicant's amendments are believed to obviate the concerns stated by the Office. Of course, the amendments are made solely to facilitate examination of the case and should not be construed as an admission by the Applicant. Specifically with respect to Rens, the Office has not accounted for the difference in the sample rates taught by Rens and the sort rates taught by the Applicant. A sample rate refers merely to the number of analysis events conducted each second, whereas a sort rate refers to the actual number of sperm sorted each second. There are less sperm sorted each second than are analyzed because not every analysis event yields a conclusion certain enough to warrant a sort. As a result, the sample rates taught by Rens cannot be used to reliably infer the actual sort rates achieved by Rens. Importantly, Rens does not discuss any actual sort rates achieved at all. In this manner, it may be seen that Rens in fact does not teach the sort rates taught by the Applicant. Accordingly, the Applicant respectfully requests the Office withdraw its obviousness concerns regarding the claims.

The Office raises a number of obviousness-type double patenting concerns. The Applicant is willing to execute a terminal disclaimer to remove these concerns. However, the Applicant's amendments to the claims may have obviated the Office's concerns or changed the combinations of references cited by the Office. Accordingly, the Applicant suggests it may be appropriate to await the Office's disposition of the current response before the Applicant executes a terminal disclaimer.

## CONCLUSION

The Applicant, having addressed each of the concerns raised in the Office Action, respectfully requests reconsideration and withdrawal of the rejections and objections to the application. Allowance of claims 186-197, 199-203, 205-208, and 210-220 is requested at the Office's earliest convenience.

Dated this 18<sup>th</sup> day of July, 2007.

Respectfully submitted,  
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